

What Is Claimed Is:

1. A method for determining the point of engagement of a clutch (MSK) operable via an actuating device, in particular of a clutch situated in a transfer case of a motor vehicle having all-wheel drive, the actuating device having a positioning motor (GM) which is electrically drivable via a control unit (508), the output of the positioning motor providing a motor torque and a motor speed, the motor being operationally linked to an actuating mechanism (102, 103, 104) which actuates the clutch (MSK), the rotational angle position at the motor output side or a quantity derived therefrom being detected,

wherein the positioning motor (GM) is arbitrarily actuated by the control unit (508) for determining the point of engagement in such a way that the clutch (MSK) is engaged and, when a predeterminable rotational angle position (s1) of the positioning motor or the quantity derived therefrom is attained,

- in a first operating mode, a constant voltage is applied to the positioning motor (GM) by the control unit and, at the same time, the motor speed is detected as a function of the rotational angle position and in particular the motor current is also detected as a function of the rotational angle position,
- and/or in a second operating mode, the control unit applies a constant current to the positioning motor (GM) and the motor speed is detected as a function of the rotational angle position,

and the point of engagement is determined from the detected values of the motor speed that are a function of the rotational angle position, and in particular, in addition, from the detected values of the motor current that are a function of the rotational angle position.

2. The method as recited in Claim 1, wherein the positioning motor is triggered in the speed-

regulated mode until the predefinable rotational angle position (s1) of the positioning motor (GM) or the quantity derived therefrom is attained.

3. The method as recited in Claim 1 r 2 wherein a current regulator-speed regulator unit (506, 507) connected in a cascade circuit is provided; and in the first operating mode the manipulated variable of the current regulator (506) is switched to be constant and/or in the second operating mode the manipulated variable of the speed regulator (507) is switched to be constant.

4. The method as recited in one of Claims 1 through 3, wherein the point of engagement is determined by the control unit at a standstill of the motor vehicle.

5. The method as recited in Claim 1, wherein the point of engagement is determined by regression from the detected values of motor speed and/or motor current which are a function of the rotational angle position.

6. The method as recited in Claim 5, wherein two regression ranges (801, 802) are predefined, of which a first regression range (801) is located in the free travel path of the actuating mechanism and a second regression range (802) is located in the actuator load range of the actuating mechanism, in which the actuating mechanism is driven against the actuator load torque generated by the clutch, and the point of engagement is determined as the point of intersection of the two determined straight regression lines.

7. A system for determining the point of engagement of a clutch (MSK) of a motor vehicle operable via an actuating device, in particular of a clutch situated in a transfer case of a motor vehicle having all-wheel drive, the actuating device having a positioning motor (GM) which is electrically drivable via a control unit (508), the output of the

positioning motor providing a motor torque and a motor speed, the motor being operationally linked to an actuating mechanism (102, 103, 104) which actuates the clutch (MSK), the rotational angle position at the motor output side or a quantity derived therefrom being detected, wherein the positioning motor (GM) is arbitrarily actuated by the control unit (508) for determining the point of engagement in such a way that the clutch (MSK) is engaged and, when a predeterminable rotational angle position (s1) of the positioning motor or the quantity derived therefrom is attained,

- in a first operating mode, a constant voltage is applied to the positioning motor (GM) by the control unit and, at the same time, the motor speed is detected as a function of the rotational angle position and in particular the motor current is also determined as a function of the rotational angle position,
- and/or in a second operating mode, the control unit applies a constant current to the positioning motor (GM) and the motor speed is detected as a function of the rotational angle position;

and the point of engagement is determined from the detected values of the motor speed that are a function of the rotational angle position, and, in particular, in addition, from the detected values of the motor current that are a function of the rotational angle position.

8. The system as recited in Claim 7, wherein a current regulator-speed regulator unit (506, 507) connected in a cascade circuit is provided; and the manipulated variable of the current regulator (506) is switched to be constant in the first operating mode, and/or the manipulated variable of the speed regulator (507) is switched to be constant in the second operating mode.

9. The system as recited in Claim 7,
wherein the point of engagement is determined by the control
unit at a standstill of the motor vehicle.